

**NASA - John F. Kennedy Space Center**

**Recycling Program Plan**

**Prepared by**

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# KENNEDY SPACE CENTER RECYCLING PROGRAM PLAN

## I. PURPOSE

This document formally establishes a comprehensive Recycled Material Program for Kennedy Space Center (KSC). It defines all elements of the program from changing the behavior around waste and recycling, to creating more recycling infrastructure to divert waste, to expanding existing programs to tackle new materials or processes, and to implementing waste prevention techniques through the use of funds obtained from the sale of materials for recycling purposes. Section 6002 of the Resources Conservation and Recovery Act (RCRA) and Executive Order (EO) 13101 "*Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*," directs federal agencies to purchase recycled content products whenever possible.

## II. RESPONSIBILITY

The Center Operations Directorate (TA) is responsible for establishment of a Recycling Program and the appointment of a Recycling Coordinator to initiate and coordinate the Recycling Program across all KSC organizations. The Recycling Coordinator exists within the Environmental Program Branch (TA-C3) of the Medical and Environmental Division (TA-C). The Recycling Coordinator will administer the Recycling Program as required in the NASA Plan to Implement Executive Order 13101 and KNPR 8500.1.

The Recycling Coordinator is responsible for: 1) implementing an awareness program to promote recycling through a working group such as the Environmental Working Group or the Pollution Prevention Working Group, 2) sharing information on the development and implementation of new technologies that improve NASA's recycling and waste prevention programs, 3) achieving a 35% diversion of waste to the landfill by 2010.

Each organization is responsible for integrating this program into their primary program responsibilities. The success of this program will support the requirements of EO 13101, increase environmental performance, lower operating cost, and make available the funding to implement additional pollution prevention program activities.

## III. SCOPE

The Recycling Program Plan applies to all KSC organizations, contractors and/or users of facilities, here in after referred to as "contractor(s)" at KSC, and off-site areas where KSC has operational responsibility. The Recycling Coordinator shall provide Center-wide recovery and sale, reuse, or exchange of recyclable materials owned by the Government. The implementation of this Program is designed to ensure all employees center-wide complies with EO 13101, *Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*.

The Recycling Coordinator will work closely with the Property Disposal Contracting Officers to provide language requirements for modifying existing contracts and create requirements for new contracts.

#### IV. AUTHORITY

- i. **RCRA 6002** - Section 6002 of the Resources Conservation and Recovery Act (RCRA)
- ii. **Executive Order 13101** - *Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*
- iii. **KNPR 8500.1** - *KSC Environmental Requirements*

#### V. DEFINITIONS

- i. **Affirmative Procurement** - The preferred procurement of products made with recycled materials that can perform equal to or better than products made with virgin materials.
- ii. **Recyclable material** - Any material that no longer supports the function for which it was manufactured and may be reprocessed and used again or used as a raw material in manufacturing a new product.
- iii. **Recyclability** - The ability of a material or product to be recovered from the solid waste stream for the purpose of recycling.
- iv. **Recycled material** - A material that is used in place of a primary, raw or virgin material in manufacturing a product.

#### VI. RECYCLING PRINCIPLE at KSC

KSC use the 3R's Principle for its Recycling Program: ***Reduce, Reuse and Recycle***. Examples for the 3 R's Principle are:

- a) **Reduce Principle:**
  - 1. Don't print emails unless absolutely necessary;
  - 2. Always double-side or reduce size when printing or photocopying
  - 3. THINK: Do I need to print, or can I edit on screen or store documents electronically?
- b) **Reuse Principle:**
  - 1. Use paper that is already printed on one side for notes and drafts before recycling
  - 2. Reuse paper products such as manila folders and envelopes
- c) **Recycle Principle:**
  - 1. Ensure your office has clearly labeled paper recycling bins
  - 2. Recycle only the paper products listed, e.g. envelopes and sticky notes can be recycled

## VII. RECYCLABLE OFFICE ITEMS at KSC

- i. **Aluminum Cans** - Recycle bins labeled “KSC Aluminum Can Recycle Program” are located throughout the center.
- ii. **Cardboard (Clean)** - small boxes (approximately the size of a small copy paper box) broken down and left adjacent to wastebasket will be removed by a custodian. All other large boxes are to be broken down by the KSC employee and disposed of in cardboard recycling containers, which are located near each building. If there is no cardboard recycling containers located near your area, place the folded boxes beside the trash dumpster. Packing materials are to be removed and disposed of in regular trash dumpsters.
- iii. **Paper** - white paper may be disposed of in blue desk top bins and large blue wheel rounds labeled for paper recycling located in the corridor or janitor’s closet. The following white paper is acceptable:
  - White bond, notebook, adding machine paper.
  - White computer paper (with or without colored print).
  - KSC Bulletin, Spaceport News.
  - Office Newsletters (non-coated).
  - Copier paper (non-coated).
  - Colored tabs, Post-It notes, colored paper, binder clips, coated paper, thermal fax paper, NCR paper, carbon forms, wet garbage, document protectors, and other items which contaminate our recycling effort at KSC should be removed before recycling. Small staples are okay.
  - The white pages from KSC Phone Books are not recyclable due to sensitive data; however, the rest of the KSC phone book is recyclable.
- iv. **Recyclable Spent Toner Cartridges** - spent toner cartridges are recyclable through vendors or supply organizations.
- v. **Take-Home Recyclables** - employees are encouraged to take other recyclable containers, newspapers, and commercial telephone books home for inclusion in curbside collection programs. KSC phone books are not to be taken off Center.

## VIII. RECYCLABLE SOLID WASTE at KSC RECLAMATION YARD

At KSC, solid wastes are defined as the materials and equipment that are non-hazardous, non-liquid items that may be sold for scrap or as a recyclable product; or be disposed of in the KSC Class III Landfill or Brevard County Landfill. To meet the 35% diversion of waste to the landfill by 2010, the Reutilization, Marketing, and Recycling Facility (RMRF) will accept the following items at the Reclamation Yard, M6-1671, for recycling and resale:

- i. **Aerosol Cans (Punctured)** - Aerosol cans must be punctured, drained of free liquid, and deposited in a suitable container. Generators should submit a Process Waste Questionnaires (PWQ) to the Waste Management Authority (WMA) for evaluation of any residuals.
- ii. **Appliances** - Items such as refrigerators, water fountains, stoves, and window air-conditioning units that are in operational condition may be resold. Any item containing refrigerant, such as refrigerators, water fountains, and window air-conditioning units must have a certification from the appropriate A/C Shop Manager on the turn-in document. For

- items containing refrigerants, a yellow “Serviceable Tag - Materiel” tag, DD Form 1574, must be affixed to the item in a waterproof bag.
- iii. **Batteries (Silver-Zinc)** - These batteries must be clearly marked and accompanied by an MSDS.
  - iv. **Batteries (Lead-Acid)** - The batteries must be clearly marked as “Lead-Acid.” **Do not drain the batteries.**
  - v. **Computers and Software** - Computers, floppy disks, monitors, and keyboards are accepted. Information on hard drives must be reformatted.
  - vi. **Drums (Steel and Plastic)** - Drums must be free of residual liquids or solids, however, a small amount of absorbent is allowed. Steel, stainless steel, or plastic drums will be accepted.
  - vii. **Furniture** - Desk, chairs, tables, etc. must be in usable condition.
  - viii. **Miscellaneous** - Almost any item that is usable is a candidate to be resold, such as tools, valves, pumps, and motors.
  - ix. **Reusable Pallets** - will reuse wood or plastic pallets that are usable.
  - x. **Scrap Metal** - Most forms of scrap metal will be accepted. Items, such as unserviceable refrigerators, water fountains, and window air-conditioning units, containing refrigerant, must be drained of refrigerant by an EPA-certified technician and have a certification from the appropriate air conditioner shop manager on the turn-in document.
  - xi. **Tires** - Tires are accepted.
  - xii. **Wood Pallets** - Clean, uncontaminated wood pallets are accepted.

## **IX. RECYCLABLE SOLID WASTE at KSC CLASS III LANDFILL**

Trash items not requiring special handling may be disposed of in receptacles slated for disposal in either the KSC Class III Landfill or the Brevard County Landfill. The KSC Class III Landfill will accept the following items:

- i. **Cardboard (Non-Office)**: non-office item cardboard.
- ii. **Plastic**: Empty, dry plastic items (except computer floppy disks) may be disposed of as refuse.
- iii. **Food Containers**: Containers, such as Styrofoam, plastic, etc., that are free of food or liquids.
- iv. **Construction, Demolition (C&D), and Maintenance Debris**: The KSC Landfill is an unlined Class III Landfill with permit restrictions (FDEP Permit No. SO05-243090) and limited capacity. The KSC Landfill will only accept the following C&D items:
  - **Asphalt**: Asphalt removed from parking lots, driveways, and roadways.
  - **Blast Media**: A waste generator of “new” spent blast media must submit a PWQ to the WMA for evaluation. The blast media must be as free from debris as possible and determined non-hazardous for acceptance into the KSC Landfill. A disposal certification form must accompany the blast media to the landfill and will be reviewed by the landfill operator.
  - **Carpeting**: Carpet may be disposed of in the KSC Landfill.
  - **Demolition Debris**: Scrap metal from demolition projects should be managed according to guidance provided in this section for recyclable material. Waste generators of larger demolition projects involving structural members must sample the materials using TCLP

testing procedures for metals. The landfill may not accept any painted materials that test above the lower TCLP detection limits for barium, cadmium, chromium, lead, and mercury. If TCLP results are above the lower TCLP detection limits, submit a PWQ for evaluation.

- **Fiberglass:** Fiberglass is accepted.
- **Glass (Except Light Bulbs or Lamps):** Glass is accepted.
- **Painted Materials:** Ramps, stairs, doors, etc. or debris from small renovation projects will be accepted at the KSC Landfill without TCLP testing.
- **Pallets (Unserviceable Wood and Plastic):** Pallets that are not reusable or recyclable are accepted.
- **Wood:** Miscellaneous wood items are accepted.
- **Yard Waste (Vegetation):** Vegetation from maintenance activities is accepted.

## **X. RECYCLING PROGRAM DATA REPORING**

The annual RCRA Section 6002 data for KSC Recycling Program are reported in the NASA Environmental Tracking System (NETS) by the end of February every year. NETS is an automated application and database supporting: a) Mandatory NASA agency environmental reporting; b) NASA Agency wide performance metrics; and c) Environmental Functional Management.

Designated KSC employees who need to input the annual KSC Recycling data into NETS are required to have a USER ID and Password to access the NETS system. Those designated employees should also be familiar with the NETS Guide: Recycling and Affirmative Procurement. The following is 2005 RCRA 6002 KSC Recycling Program Data:

**KSC Recycled Items For CY 2005**

| <b>Site/Material</b>                               | <b>Quantity</b>   | <b>Units</b> | <b>Revenue</b>   |
|--|-------------------|--------------|------------------|
| <b>Kennedy Space Center</b>                        | <b>27,799,093</b> | <b>lbs</b>   | <b>\$332,273</b> |
| Aluminum   | 46,400            | lbs          | \$26,083         |
| Batteries, All Types                               | 10,000            | lbs          | \$1,711          |
| Blast Media  | 4,346,420         | lbs          | \$0              |
| C&D projects                                       | 2,660,460         | lbs          | \$0              |
| Cardboard  | 45,340            | lbs          | \$93             |
| Cement and Concrete                                | 11,242,920        | lbs          | \$0              |
| Copper   | 206,500           | lbs          | \$133,333        |
| Electronics (scrap property material content only) | 353,950           | lbs          | \$70,790         |
| Lumber   | 808,840           | lbs          | \$0              |
| Mixed Paper  | 723,518           | lbs          | \$12,454         |
| Printer  | 165,647           | lbs          | \$15,062         |
| Scrap Metal  | 2,013,533         | lbs          | \$65,229         |
| Stainless Steel                                    | 13,000            | lbs          | \$7,172          |
| Toner Cartridges (1.5 lbs per)                     | 3,000             | units        | \$0              |
| Trailer  | 165,000           | lbs          | \$345            |
| Yardwaste  | 12,969            | cubic yds    | \$0              |
| <b>KSC Base Operations</b>                         | <b>98,047,305</b> | <b>lbs</b>   | <b>\$0</b>       |

|                                     |              |            |              |
|-------------------------------------|--------------|------------|--------------|
| Aluminum                            | 5,000        | lbs        | \$0          |
| Antifreeze                          | 5,607        | gals       | \$0          |
| Batteries, All Types                | 1,743        | lbs        | \$0          |
| Blast Media                         | 71,213       | lbs        | \$0          |
| Fluorescent Lamps (1.25 lbs. per)   | 5,929        | units      | \$0          |
| Oil Filters                         | 10,185       | lbs        | \$0          |
| Oily Rags                           | 5,100        | lbs        | \$0          |
| Photo Fixer                         | 772          | gals       | \$0          |
| Tires (25 lbs. per)                 | 270          | units      | \$0          |
| Used Oil                            | 31,149       | gals       | \$0          |
| White Paper                         | 228,300      | lbs        | \$0          |
| Yardwaste                           | 253,000      | cubic yds  | \$0          |
| <b>KSC Life Science</b>             | <b>539</b>   | <b>lbs</b> | <b>\$0</b>   |
| Cardboard                           | 0            | lbs        | \$0          |
| Fluorescent Lamps (1.25 lbs. per)   | 390          | units      | \$0          |
| Mixed Paper                         | 0            | lbs        | \$0          |
| Toner Cartridges (1.5 lbs per)      | 34           | units      | \$0          |
| <b>KSC Payloads/Station Program</b> | <b>1,812</b> | <b>lbs</b> | <b>\$158</b> |
| Lead                                | 500          | lbs        | \$158        |
| Refrigerant                         | 1,287        | lbs        | \$0          |
| Solvents                            | 25           | lbs        | \$0          |
| Aluminum                            | 250          | lbs        | \$0          |
| Antifreeze                          | 234          | gals       | \$0          |
| Batteries, All Types                | 30           | lbs        | \$0          |
| Cardboard                           | 137,341      | lbs        | \$0          |
| Cooking Oil/Grease                  | 9,235        | lbs        | \$0          |
| Fluorescent Lamps (1.25 lbs. per)   | 1,601        | units      | \$0          |
| Mixed Paper                         | 4,034        | lbs        | \$0          |
| Oil Filters                         | 1,072        | lbs        | \$0          |
| Oily Rags                           | 16,640       | lbs        | \$0          |
| Plastic                             | 420          | lbs        | \$0          |
| Tires (25 lbs. per)                 | 242          | units      | \$0          |
| Toner Cartridges (1.5 lbs per)      | 3,000        | units      | \$0          |
| Used Oil                            | 2,600        | gals       | \$0          |

## XI. USE OF RECYCLING FUNDS

On September 30, 1994, the President approved Public Law 103-329 which authorized Federal agencies to receive and use funds resulting from the sale of materials for recycling for additional recycling, pollution prevention, or environmental awareness programs. Recycling and waste prevention activities will be given accounting codes by GG Directorate. All proceeds from recycling shall be deposited into a designated fund code provided by GG. Projects using Recycling Fund monies shall be made for periods of not more than 18 months, except that, upon a finding of the Recycling Board that a longer period is necessary in order to capitalize a specific project, the Recycling Board may vote to allow a particular project to be made for a period of not more than 24 months. No project using

Recycling Fund monies shall provide for an option to renew or any similar provision that would result in the extension of a project.

## **XII. PROJECT REQUIREMENTS**

1. **Call for Projects**: once a year, a formal request for new projects to use recycling funds shall be disseminated through the Environmental Working Group (EWG)
  - i. **Responsibility** - EPB is responsible for the initiation of the projects call and for receiving the proposals. The Environmental Coordinator for each organization will respond to the request for proposals, collect proposals for the use of recycling funds, and submit the proposals to EPB on or before the due date.
  - ii. **Implementation** - The EPB will prepare a request for projects and distribute it through the EWG by May 1<sup>st</sup> of each year. Each Environmental Coordinator will prepare a list of projects targeted at recycling, pollution prevention, or environmental awareness that their organization would like to fund using this fund source. The projects must have detailed cost estimates, identify a project lead, and where in the organization funding is to be forwarded. Proposals must be submitted to the EPB by May 31<sup>st</sup> of each year.
2. **Project Selection**: Projects will be selected based on funds available and overall gain for the Center.
  - i. **Responsibility** - The selection team will be comprised of the Environmental Coordinators from OP, PH, and TA, and the Lead of the Environmental Management Systems (EMS) Group. This group will be responsible for the development of a ranking for all projects submitted based on cost and value per dollar to the Center. Where a consensus is not reached, a majority decision will be accepted.
  - ii. **Implementation** - Based on the funds available, projects will be funded in the order of their position on the ranking list.
3. **Funding Transfers**: An Avoid Verbal Order (AVO) is prepared by the Lead of the EMS Group to the NASA Resources Management Office, directing them to disburse funds for a specific project.
  - i. **Responsibility** - EPB is responsible for directing the allocation of funds. GG-B is responsible for receiving the proceeds from the sale of KSC recycled materials from TA-E1-A and directing it into account. GG-B is responsible for the disbursement of funds for recycling projects.
  - ii. **Implementation** - EPB will verify that funds are available for recycling projects and that the projects identified for funding are ready for implementation. EPB will then request that GG-B make funds available to the project lead.
4. **Project Close -Out**



- i. **Responsibility** - At the conclusion of each recycling revenue-funding project, the implementing agent is responsible for a final accounting of the funds used on the project. EPB is responsible for maintaining records of project funding activities each year and preparing a report for the Center.
- ii. **Implementation** - Within 30 days of the project completion, the project lead will submit a final report to EPB identifying all funds utilized. The report will include a complete breakdown of how funds were used and a short write-up of how the Center's environmental performance has improved. EPB will maintain a permanent file of all funds disbursement under this program.